

CLAIMS

1. Helical antenna (30, 70, 80, 90) including at least one helix formed by at least two radiating wires (31, 71, 81, 91),

characterised in that at least one of said radiating
5 wires is associated with a parasitic wire (34, 74, 84, 94) narrower than or equal in width to said radiating wire(s) so as to broaden the bandwidth of the antenna.

2. Helical antenna according to claim 1, characterised in that each of said parasitic wires is
10 connected to the ground (35, 75, 85, 95).

3. Helical antenna according to either of claims 1 and 2, characterised in that said radiating wires and said parasitic wires are printed on a substrate (32, 72, 82, 92).

15 4. Helical antenna according to any one of claims 1 to 3, characterised in that each of said radiating wires is associated with a parasitic wire narrower than or equal in width to said radiating wire.

20 5. Helical antenna according to claim 4, characterised in that the ratio between the width of each of said parasitic wires and the width of said associated radiating wire is less than or equal to 0.15.

25 6. Helical antenna according to any one of claims 1 to 5, characterised in that each of said parasitic wires is positioned with respect to said associated radiating wire so as to optimise the coupling between said parasitic wire and said associated radiating wire.

7. Helical antenna according to any one of claims 1 to 6, characterised in that each of said parasitic wires is farther from said associated radiating wire than from at least one of said other radiating wires.

5 8. Helical antenna according to any one of claims 1 to 7, characterised in that each of said parasitic wires is parallel to the radiating wire with which it associated.

10 9. Helical antenna according to any one of claims 1 to 8, characterised in that each of said parasitic wires has substantially the same length as the radiating wire with which it is associated.

15 10. Helical antenna according to any one of claims 1 to 9, characterised in that one of the ends of each of said radiating wires is connected by a conductive connection (36, 86, 96) to one of the ends of said radiating wire with which said parasitic wire is associated.

20 11. Helical antenna (70) according to any one of claims 1 to 9, characterised in that one of the ends (75) of each of said radiating wires is connected by coupling to one of the ends of said radiating wire with which said parasitic wire is associated.

25 12. Helical antenna according to claim 11, characterised in that said radiating wires are printed on a first surface of a substrate and in that said parasitic wires are printed on a second surface of said substrate.

30 13. Helical antenna according to claim 12, characterised in that at least one parasitic wire and one radiating wire adjacent to said radiating wire with

which said parasitic wire is associated cross over one another.

14. Helical antenna according to any one of claims 10 to 13, characterised in that the end of said radiating wires not connected to a parasitic wire is connected to a feedline of a power supply circuit (33, 73, 83, 93).

15 15. Helical antenna according to any one of claims 1 to 14, characterised in that at least one of said helices is a quadrifilar helix, including four wires.

16. Helical antenna according to any one of claims 1 to 15, characterised in that said radiating wires forming a helix are all the same size and in that said parasitic wires are all the same size.

15 17. Helical antenna (90) according to any one of claims 1 to 16, characterised in that at least one of said radiating and/or parasitic wires is formed by at least two segments, in which the angles of wrap of at least two of said segments are different and determined randomly or pseudo-randomly using global optimisation means.

25 18. Helical antenna (80) according to any one of claims 1 to 17, characterised in that at least one of said radiating and/or parasitic wires has a variable width, varying regularly and consistently between a maximum and a minimum width.

30 19. Helical antenna according to any one of claims 1 to 18, characterised in that said radiating wires have a length substantially different from a multiple of the wavelength corresponding to the mean frequency of the transmission band of said antenna, divided by 4.